

Defensive Behavior of a Puerto Rican Cerambycid (Coleoptera)

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RECEIVED FOR PUBLICATION FEBRUARY 20, 1970

Abstract: A beetle, *Chlorida festiva* (Cerambycidae), exhibited defensive behavior including: (1) motionless concealment, (2) stridulation, (3) "attack" with spined elytra, and (4) flight. This escape-attempt series is similar to that exhibited by many other insects, although the predatory pressures leading to its evolution have not yet been identified in this insular situation (Puerto Rico).

OBSERVATIONS

While collecting lepidoptera near Fajardo, Puerto Rico, on 26 January 1970, I observed interesting defensive actions of a cerambycid beetle, *Chlorida festiva* Linn. (Fig. 1). On close approach the beetle remained motionless, and its green body with light tan patches strongly resembled the common background vegetation. When I picked it up, it produced a stridulation, apparently by rubbing the posterior edge of the prothorax against the bases of the elytra. (Other cerambycids sometimes make grating sounds by scraping the hind femora against the elytra). Stridulations can startle would-be predators, and are classified as "warning" sounds. This noise continued to be produced until the beetle spread the elytra, causing the terminal spines thereof to prick my fingers. Although my skin was not pierced, I immediately relaxed my hold, and the beetle took flight. (After brief searching I was able to relocate and collect it).

DISCUSSION

This series of defensive actions is reminiscent of those exhibited by many insects, where concealment or passive behavior is the first line of defense, and where this is followed by a series of active elements such as startle displays or stridulation (Robinson, 1968, *Psyche*, **75**: 195–207). Perhaps because of the required energy expenditure, flight is often reserved as the last element of an escape-attempt series. The flight reaction also requires the predator to release its hold, and for this the insect may inflict pain (for example, some cerambycids will deliver a hard bite).

With the impoverished vertebrate fauna of Puerto Rico, it is difficult to predict what animals may have fed on this species before the recent introduction

Acknowledgment: The specimen was kindly identified by Dr. H. Dietrich of Cornell University, and has been deposited in the collection of the entomology department.

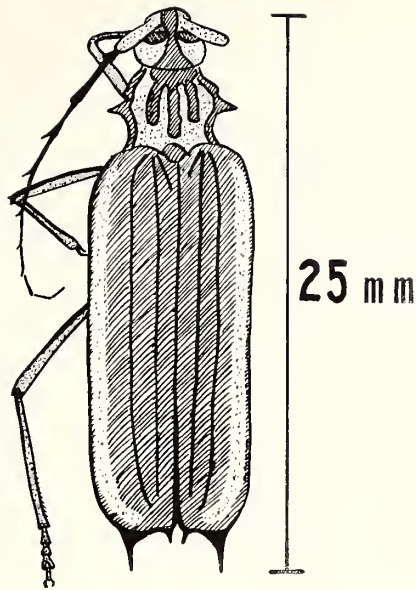


FIG. 1. Sketch of *Chlorida festiva*, showing the short antennal spines, and the long terminal spines of the elytra.

of terrestrial mammals (e.g. rat and mongoose), since it seems too large to be a food item for most species of the resident avifauna, or for invertebrate predators. Even the few local birds which may feed on this beetle (e.g. *Crotophaga ani* and *Ardeola ibis*) appear to have arrived on the Island in recent times. Thus, the complex defensive behavior (or morphological adaptations involved with such behavior) of insects in insular situations, where predators are often few in numbers, presents the question of the identification of the original predatory pressures which enforced the evolution of such defense.